

CLAIMS

What is claimed is:

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6. (Currently amended) Float collar/ shoe equipment for use in lowering a tubular string into a wellbore, said equipment comprising:

an outer tubular member and an inner tubular member moveable between a first position and a second position having an open lower end which opens into the wellbore to permit flow of fluid into or out of the tubular string bore;

an inner tubular member moveable between a first position and a second position relative to the stationary outer tubular, wherein said inner tubular member is within said outer tubular member in said first position;

one or more valves positioned between said outer tubular member and said inner tubular member when said inner tubular member is in said first position; and

said one or more valves being insulated from fluid flow in said first position and being selectively engageable with fluid flow in said second position.

7. (Original) Float collar/ shoe equipment of Claim 6, further comprising:

one or more valve seats positioned between said outer tubular member and said inner

tubular member.

3 8. (Previously Amended) Float collar/ shoe equipment of Claim ~~1~~², wherein said inner tubular member is moveable with respect to said outer tubular member from said first position to a second position for uncovering said valves and said valve seats.

4 9. (Original) Float collar/ shoe equipment of Claim ~~6~~¹, wherein said outer tubular member defines one or more passageways therethrough which are blocked by said inner tubular member in said first position, said one or more passageways being opened to permit fluid flow from within said tubular string to outside of said tubular string when said inner tubular member is moved from said first position to a second position.

5 10. (Original) Float collar/ shoe equipment of Claim ~~6~~¹, further comprising a seat secured to said inner tubular member for receiving a drop member.

6 11. (Original) Float collar/ shoe equipment of Claim ~~6~~¹, wherein said one or more valves comprises a plurality of flapper valves.

7 12. (Original) Float collar/ shoe equipment of Claim ~~6~~¹, wherein said one or more valves are held in an open position when said inner tubular member is in said first position.

8 13. (Previously amended) Float collar/ shoe equipment operable for use in lowering a tubular string into a wellbore prior to cementing said tubular string within said wellbore, said tubular

string having an inside and an outside external to said inside, said well equipment comprising:

an outer tubular member forming a portion of said tubular string and having at least one up jet therein for directing pumped cement in an up hole direction during said cementing of said tubular string within said wellbore, each of said at least one up jets providing a passageway between said inside and said outside of said tubular string; and

a moveable member, said moveable member being mounted to block fluid flow through said at least one up jet in a first position, said moveable member permitting said pumped cement to flow through said up jet in a second position.

9 14. (Previously re-presented) Float collar/ shoe equipment operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:

an outer tubular member forming a portion of said tubular string and having at least one up jet therein, each of said at least one up jets providing a passageway between said inside and said outside of said tubular string;

a moveable member, said moveable member being mounted to block fluid flow through said at least one up jet in a first position, said moveable member permitting fluid flow through said up jet in a second position; and

at least one down jet, wherein said moveable member is mounted to permit fluid flow through said at least one down jet in said first position, said moveable member being mounted to block fluid flow through said at least one down jet in said second position.

10 15. (Previously re-presented) Float collar/ shoe equipment operable for use in lowering a

tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:

an outer tubular member forming a portion of said tubular string and having at least one up jet therein, each of said at least one up jets providing a passageway between said inside and said outside of said tubular string;

a moveable member, said moveable member being mounted to block fluid flow through said at least one up jet in a first position, said moveable member permitting fluid flow through said up jet in a second position; and

one or more valve seats, said one or more valve seats being insulated from fluid flow in said first position and being selectively engageable with fluid flow in said second position.

11 16. (Currently amended) Float collar/ shoe equipment operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:

an outer tubular member forming a portion of said tubular string and having at least one up jet therein, each of said at least one up jets providing a passageway between said inside and said outside of said tubular string;

a moveable member, said moveable member being mounted to block fluid flow through said at least one up jet in a first position, said moveable member permitting fluid flow through said up jet in a second position; [and]

one or more valve seats; and

one or more valves for operation with said one or more valve seats.

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17. (Original) Float collar/ shoe equipment operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:

a moveable member operable for selectively controlling fluid flow through one or more jets, said jets directing fluid from said inside of said tubular string to said outside of said tubular string; and

a drop member mounted adjacent to said moveable member, said drop member being operable in response to fluid pressure for engaging said moveable member.

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18. (Original) Float collar/ shoe equipment of Claim 17, further comprising one or more valves, said moveable member being operable for activating said one or more valves for controlling fluid flow through said tubular string.

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19. (Currently amended) A method for completing a well operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said method comprising:

sealing off one or more valves from fluid flow through said tubular string such that said valves are held in an open position; and

selectively uncovering said valves for controlling fluid flow through said tubular string;
providing an inner tubular member moveable between a first position and a second position; and

providing an outer tubular member having an open lower end which opens into said wellbore to permit flow of fluid into or out of said bore wherein said moveable inner tubular

member is mounted to block fluid flow through said open lower end in said second position.

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20. (Original) The method of Claim 19, wherein said step of selectively uncovering further comprises dropping a member into said tubular string.

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21. (Original) The method of Claim 19, further comprising:
selectively closing one or more passageways between said inside of said tubular string and said outside of said tubular string.

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22. (Currently amended) A method for a well for use in installing a tubular string into a wellbore by cementing said tubular string into said wellbore, said tubular string having an inside and an outside external to said inside, said method comprising:

pumping cement into said tubular string and through one or more down jets while installing said tubular string into said wellbore; and

selectively blocking said one or more down jets to prevent cement flow through said one or more down jets during said cementing of said tubular string into said wellbore.

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23. (Original) The method of Claim 22, further comprising:
selectively blocking one or more up jets.

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24. (Original) The method of Claim 22, further comprising:
selectively exposing one or more check valves to fluid pressure.

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(Original) The method of Claim 22, wherein said step of selectively blocking further comprises releasing a drop element to thereby slide a moveable member.

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36. (Previously amended) Well equipment operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:

an outer tubular member forming a portion of said tubular string and having at least one down jet therein, each of said at least one down jets providing a passageway between said inside and said outside of said tubular string; and a moveable member, said moveable member being moveable one time only from a first position to a second position, said moveable member being mounted to permit fluid flow through said at least one down jet in said first position, said moveable member being mounted to block fluid flow through said at least one down jet in said second position.

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(Original) The well equipment of Claim 36, further comprising:

at least one up jet, said moveable member being mounted to block fluid flow through said
at least one up jet in said first position, said moveable member permitting fluid flow through said
up jet in said second position.

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(Original) The well equipment of Claim 36, further comprising one or more valve seats,
said one or more valve seats being insulated from fluid flow in said first position and being
selectively engageable with fluid flow in said second position.

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(Original) The well equipment of Claim 38, further comprising one or more valves for
operation with said one or more valve seats.

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(Previously amended) Well equipment operable for use in installing a tubular string into
a wellbore by cementing said tubular string into said wellbore, said well equipment comprising:

one or more up jets formed in said tubular string;

one or more down jets formed in said tubular string; and

one or more moveable members, said one or more movable members being operable for
selectively controlling fluid flow through at least one said one or more down jets for washing
and for blocking said at least one or more down jets while directing cement flow through said
one or more up jets for said cementing of said tubular string into said wellbore.

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28/ 42. (Original) The well equipment of Claim 40, further comprising:
one or more float valves to prevent reverse flow through said tubular string.

29/ 43. (Currently amended) Well equipment operable for use in lowering a tubular string into
a wellbore, said well equipment comprising:

an outer tubular member having an open lower end which opens into the wellbore to
permit flow of fluid into or out of the tubular string bore;

one or more first jets formed in said tubular string;

one or more second jets formed in said tubular string; and

one or more moveable members, said one or more moveable members being operable
one time only for selectively opening said one or more first jets for fluid flow therethrough and
for closing said one or more second jets to prevent fluid flow therethrough.

30/ 44. (Original) The well equipment of Claim 43, further comprising:
one or more float valves to prevent reverse flow through said tubular string.

31/ 45. (Original) The well equipment of Claim 43, wherein said one or more first jets are up
jets.

32/ 46. (Original) The well equipment of Claim 43, wherein said one or more second jets are
down jets.

33/ 47. (Previously added) A float equipment assembly for lowering a tubular string from a

surface position into a wellbore, said assembly comprising:

an outer tubular affixed to said tubular string;

a first flapper valve body mounted within said outer tubular, said first flapper valve body defining a first bore therethrough;

a first flapper closure element pivotally mounted to said first flapper valve body for pivotal movement between an open position and a closed position, said first flapper closure element being selectively operable between an auto-fill mode and a back pressure mode, in said auto-fill mode said first flapper closure element being secured in said open position to permit fluid flow through said first bore in a direction toward said surface position and also to permit fluid flow in a direction away from said surface position, in said back pressure mode said first flapper closure element being pivotally moveable between said open position and said closed position responsively to fluid flow direction and being mounted to thereby prevent fluid flow through said first bore in said direction toward said surface position and to permit fluid flow in said direction away from said surface position;

a second flapper valve body mounted within said outer tubular, said second flapper valve body defining a second bore therethrough;

a second flapper closure element pivotally mounted to said second flapper valve body for pivotal movement between an open position and a closed position, said second flapper closure element being selectively operable between said auto-fill mode and said back pressure mode, in said auto-fill mode said second flapper closure element being secured in said open position to permit fluid flow through said second bore in said direction toward said surface position and also to permit fluid flow in said direction away from said surface position, in said back pressure mode said second flapper closure element being pivotally moveable between said

open position and said closed position responsively to fluid flow direction and being mounted to thereby prevent fluid flow through said second bore in said direction toward said surface position and to permit fluid flow in said direction away from said surface position; and

an inner tubular having an inner tubular flow path therethrough, said inner tubular being initially securable at a first axial position with respect to said outer tubular, in said first axial position said inner tubular being mounted to extend simultaneously through both said first bore and said second bore to thereby secure said first flapper closure element in said open position for operation in said auto-fill mode and to secure said second flapper closure element in said open position for operation in said auto-fill mode, said inner tubular being axially moveable from said first axial position away from said first flapper valve body and said second flapper valve body to thereby release said first flapper closure element for operation in said back pressure mode and also to release said second flapper element for operation in said back pressure mode.

³⁴ 48. (Previously added) The assembly of claim ³³ 47, further comprising:

a drop member receptacle mounted to said inner tubular, said drop member receptacle being operable for catching a drop member, said drop member receptacle being positioned to restrict fluid flow through said inner tubular flow path when said drop member is caught in said drop member receptacle.

³⁵ 49. (Previously amended) The assembly of claim ³⁴ 48, further comprising:

at least one mounting member for securing said inner tubular in said first axial position, said at least one mounting member being responsive to a first selected fluid pressure to release said inner tubular when said drop member is caught in said drop member receptacle.

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3. 50. (Previously added) The assembly of claim 49, wherein said at least one release member is breakable in response to said first selected fluid pressure.

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51. (Previously added) The assembly of claim 49, further comprising:
a fluid pressure-operated tool mountable to said tubular string for operation at a second selected fluid pressure, said second selected fluid pressure being different than said first selected fluid pressure.

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CI 52. (Previously added) The assembly of claim 51, wherein said second selected fluid pressure is less than said first selected fluid pressure.

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53. (Previously added) The assembly of claim 48, wherein said inner tubular flow path has a sufficient internal diameter to permit a drop member, having an outer diameter which is less than the internal diameter of the inner tubular, to move into said inner tubular flow path.

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54. (Previously added) The assembly of claim 47, wherein each of said first flapper valve body, said first flapper closure element, said second flapper valve body, second flapper closure element are comprised of a drillable material.

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55. (Previously added) The assembly of claim 47, wherein a portion of said outer tubular has an axial length in which is contained each of said first flapper valve body, said first flapper closure element, said second flapper valve body, said second flapper closure element, and said inner tubular when mounted at said first axial position, said outer tubular within said axial length

comprising a cylindrical wall structure with no apertures or uncoverable apertures therein that permit fluid flow from inside of said outer tubular to outside of said outer tubular.

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56. (Previously added) The assembly of claim 47, further comprising:

at least one shoulder formed on said outer tubular for engaging and supporting at least one of said first flapper valve body or said second flapper valve body with respect to said outer tubular.

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57. (Currently amended) A method for running a tubular string from a surface position into a wellbore and for cementing said tubular string within said wellbore, said method comprising:

mounting a plurality of flapper valves, having a bore, in a float equipment tubular attached to said tubular string;

covering said bore of said plurality of flapper valves by extending an inner tubular through all of said plurality of flapper valves;

running said tubular string with said float equipment tubular into ~~said~~ the wellbore such that ~~said~~ the wellbore fluid flows inwardly into said tubular string through said inner tubular plurality of flapper valves; and

removing said inner tubular from said plurality of flapper valves such that said flapper valves are pivotal to thereby open in response to a direction of fluid flow away from said surface position and to close in response to a direction of fluid flow towards said surface position.

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58. (Previously added) The method of claim 57, wherein said step of removing said tubular further comprises:

pumping a drop member into said tubular.

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59. (Previously added) The method of claim 44, further comprising:

seating said drop member in said tubular, and

utilizing a fluid pressure acting on said drop member to remove said tubular from said plurality of flapper valves.

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60. (Previously added) The method of claim 45, further comprising:

breaking a breakable member.

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61. (Previously added) The method of claim 43, further comprising:

providing said drop member with a diameter of at least two inches.

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62. (Previously added) The method of claim 43, further comprising:

forming said plurality of flapper valves from a drillable material.

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63. (Previously added) The method of claim 43, further comprising:

providing said plurality of flapper valves with an outer diameter substantially equal to an inner diameter of said float equipment tubular such that said outer diameter of said flapper valves engages said inner diameter of said float equipment.

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64. (Previously added) The method of claim 49, further comprising:

providing a shoulder in said float equipment tubular for securing said plurality of flapper

valves in position therein.

51 65. (Currently amended) The method of claim 57, further comprising:

providing each of said plurality of flapper valves with a bore greater than two inches in diameter, and

providing that said tubular extending through said plurality of flapper valves has a tubular bore with an inner diameter greater than two inches and an outer diameter less than said bore of said plurality of flapper valves.

52 66. (Previously added) The method of claim 57, further comprising:

sealing off said plurality of flapper valves utilizing said tubular and at least one seal between said tubular and said float equipment tubular.

53 67. (Previously added) The method of claim 57, further comprising:

providing an opening through said plurality of flapper valves sized to reduce surge pressure.

54 68. (New) Well equipment operable for use in lowering a tubular string into a wellbore, said

well equipment comprising:

a moveable member;

one or more valves, said moveable member being operable for activating said one or more valves for controlling fluid flow through said tubular string; and

a drop member mounted adjacent to said moveable member, said drop member being

operable in response to fluid pressure for engaging said moveable member.

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~~69.~~ (New) The method of Claim ¹⁴~~19~~, wherein said step of selectively uncovering further comprises:

¹³ a drop member mounted adjacent to said inner tubular member, said drop member being operable in response to fluid pressure for engaging said inner tubular member; and

utilizing a fluid pressure acting on said drop member to engage said inner tubular member.

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~~70.~~ (New) The method of Claim ¹⁴~~19~~, wherein said step of selectively uncovering further comprises:

a drop member mounted adjacent to said inner tubular member, said drop member being operable in response to fluid pressure for engaging said inner tubular member;

providing at least one release member, wherein said release member is breakable in response to a selected fluid pressure;

utilizing said selected fluid pressure acting on said drop member to break said release member, wherein said drop member is seated in the inner tubular member; and

utilizing a second fluid pressure acting on said drop member to engage said inner tubular member, wherein said inner tubular member moves from said first position to said second position.